CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/WNo.12/ML/WBM/AIV/2014-15

08.08.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Mr. M. Lakkappa,** Contractor, Bangalore.
Name of the Work	Improvements to roads and drains at Chikkasandra in Ward No. 12 in SSD, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 04.08.2014
Source / Location	WBM Mix Plant, Bangalore
Type of Mix	Water Bound Macadam
Date of Testing	08.08.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	388	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	83	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	302	303	
4	Aggregate Impact value = percent fines	21.56	21.91	
	100* (W_2/W_1)%			**21.73**

Comments:

→ Maximum allowable Aggregate Impact value for Water Bound Macadam is 30%

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Note:

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Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/WNo.12/ML/WBM-III/S-T/2014-15 08.08.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Mr. M. Lakkappa,** Contractor, Bangalore.
Name of Work	Improvements to roads and drains at Chikkasandra in Ward No. 12 in SSD, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 04.08.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	Water Bound Macadam (Grade-III Metal)
Date of Testing	08.08.2014

Result : Flakiness Index = **11.73%**

Elongation Index = **13.92%**

Result : Combined Flakiness & Elongation index 25.65%

Comments:

→ Maximum allowable Flakiness and Elongation Index for Water Bound Macadam is 30%

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Job No.: CTCE/BBMP/WNo.12/ML/WBM-III/2014-15

Date: 08.08.2014

REPORT

Client	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	:	**Mr. M. Lakkappa,** Contractor, Bangalore.
Name of the Work	:	Improvements to roads and drains at Chikkasandra in Ward No. 12 in SSD, BBMP, Bangalore.
Reference	:	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 04.08.2014
Type of Mix	:	Water Bound Macadam (Grade-III Metal)
Date of Sampling	:	04.08.2014
Date of Testing	:	08.08.2014

Tests on Filler Screen Material (Gravel) (As per MORTH Clause 404.2.6)

Sl. No	Particulars	Test Results	Standards as per MORTH
1.	Liquid Limit, %	11.60	20.0% Maximum.
2.	Plasticity Index, %	Non Plastic	6.0% Maximum.
3	% Finer than 75micron	4.25	10.0% Maximum.

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Job No.: CTCE/BBMP/WNo.12/ML/WBM-II/2014-15

Date: 07.08.2014

REPORT

Client	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	:	**Mr. M. Lakkappa,** Contractor, Bangalore.
Name of the Work	:	Improvements to roads and drains at Chikkasandra in Ward No. 12 in SSD, BBMP, Bangalore.
Reference	:	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 04.08.2014
Type of Mix	:	Water Bound Macadam (Grade-II Metal)
Date of Sampling	:	04.08.2014
Date of Testing	:	07.08.2014

1) SEIVE ANALYSIS :

IS Sieve designation Size, mm	Percentage by Weight Passing for Graded Aggregate	Percentage by Weight Passing as per MORTH table 400-7
90mm	100.00	100.00
63mm	94.25	90-100
53mm	32.60	25-75
45mm	9.10	0-15
22.4mm	1.75	0-5

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07.08.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Mr. M. Lakkappa,** Contractor, Bangalore.
Name of the Work	Improvements to roads and drains at Chikkasandra in Ward No. 12 in SSD, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 04.08.2014
Source / Location	WBM Mix Plant, Bangalore
Type of Mix	Water Bound Macadam
Date of Testing	07.08.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	386	389	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	302	
4	Aggregate Impact value = percent fines	22.02	22.37	
	100* (W_2/W_1)%			**22.19**

Comments:

→ Maximum allowable Aggregate Impact value for Water Bound Macadam is 30%

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Job No.: CTCE/BBMP/WNo.12/ML/WBM-II/S-T/2014-15 07.08.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Mr. M. Lakkappa,** Contractor, Bangalore.
Name of Work	Improvements to roads and drains at Chikkasandra in Ward No. 12 in SSD, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 04.08.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	Water Bound Macadam (Grade-II Metal)
Date of Testing	07.08.2014

Result : Flakiness Index = **11.59%**

Elongation Index = **13.84%**

Result : Combined Flakiness & Elongation index 25.43%

Comments:

→ Maximum allowable Flakiness and Elongation Index for Water Bound Macadam is 30%

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Job No.: CTCE/BBMP/WNo.12/ML/WBM-II/2014-15 Date: 07.08.2014

REPORT

Client	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	:	**Mr. M. Lakkappa,** Contractor, Bangalore.
Name of the Work	:	Improvements to roads and drains at Chikkasandra in Ward No. 12 in SSD, BBMP, Bangalore.
Reference	:	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 04.08.2014
Type of Mix	:	Water Bound Macadam (Grade-II Metal)
Date of Sampling	:	04.08.2014
Date of Testing	:	07.08.2014

Table-1

Tests on Filler Screen Material (Gravel) (As per MORTH Clause 404.2.6)

Sl. No	Particulars	Test Results	Standards as per MORTH
1.	Liquid Limit, %	16.25	20.0% Maximum.
2.	Plasticity Index, %	Non Plastic	6.0% Maximum.
3	% Finer than 75micron	5.60	10.0% Maximum.

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Date: 08.08.2014

REPORT

Client	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	:	**Mr. M. Lakkappa,** Contractor, Bangalore.
Name of the Work	:	Improvements to roads and drains at Chikkasandra in Ward No. 12 in SSD, BBMP, Bangalore.
Reference	:	BBMP/AEE/SSD/DZ/PR/2014-15 Dated: 04.08.2014
Type of Mix	:	Water Bound Macadam (Grade-III Metal)
Date of Sampling	:	23.10.2013
Date of Testing	:	25.10.2013

1) SEIVE ANALYSIS:

IS Sieve designation Size,mm	Percentage by Weight Passing for Graded Aggregate	Percentage by Weight Passing as per MORTH table 400-7
63mm	100.00	100.00
53mm	98.35	95-100
45mm	71.20	65-90
22.4mm	5.75	0-10
11.2mm	1.40	0-5

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